DELTA®

DELTA® protects property. Saves energy. Creates comfort.

COSELLA DÖRKEN

NFPA 285 PERFORMANCE REQUIREMENTS

Meeting the performance requirements of NFPA 285 is determined by the analysis of NFPA 285 fire test data obtained through the testing conducted in accordance with NFPA 285 and ASTM E1354.

In addition to NFPA 285, small-scale tests are conducted in accordance with ASTM E1354, Standard Test Method for Heat and Visible Smoke Release Rates for Material and Products Using Oxygen Consumption Calorimeter (Cone Calorimeter Test), whereby various fire performance properties are calculated and/or measured.

The NFPA 285 test provides a method for determining the flammability characteristics of exterior non-load-bearing wall assemblies. The test method is intended to evaluate the combustible components within the wall. The test simulates a multistory fire performance of an entire wall assembly. The NFPA 285 testing apparatus is a two story wall assembly that includes a window opening on the first floor. Pass / Fail criteria are given and are based on flame propagation and temperatures within the wall assembly. Flame propagation must not occur either vertically or laterally beyond an acceptable distance. Temperatures are measured by use of thermocouples that are placed within the wall assembly.

Assemblies in the accompanying table are based on the specific construction materials installed in the manner described in the table. Changes or modifications to the construction and/or materials used in the tested assemblies may result in a different fire performance, and may not meet the performance requirements of NFPA 285.

The testing of water-resistive barrier (WRB) products in assemblies is not specifically required in the 2000, 2003, 2006, and 2009 Editions of the International Building Code (IBC). In these editions of the building code, an exterior wall assembly required to meet NFPA 285 would have to be constructed for testing to include all combustible materials and products for which compliance is being sought. In the 2012 Edition of the IBC, a new section was added to the code specifically requiring the testing of WRB materials in wall assemblies. Section 1403.5 requires that exterior walls on buildings of Type I, II, III, and IV construction that are greater than 40 ft. above grade plane, and that incorporate a combustible water-resistive, barrier shall meet the requirements of NFPA 285. By virtue of this code requirement, all combustible WRB materials must be tested in accordance with and comply with the criteria of NFPA 285, even if the wall assembly excluding the WRB would not be required to meet NFPA 285.

> *International Building Code 2012*
> *1403.5 Vertical and lateral flame propagation. Exterior walls on buildings of Type I, II, III or IV construction that are greater than 40 feet (12 192 mm) in height above grade plane and contain combustible water-resistive barrier shall be tested in accordance with and comply with the acceptance criteria of NFPA 285.*

Attached is a table describing NFPA 285 Compliant Wall Assemblies, incorporating DELTA® air and water-resistive barriers. The table provides a list of wall components and materials that can be used to achieve approved walls.

PREMIUM QUALITY

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NFPA 285 COMPLIANT WALL ASSEMBLIES

The following assemblies meet the performance requirements of NFPA 285 (2012) as required by the International Building Code®.

Wall Component	Materials
Base wall system – Use either 1, 2, or 3	1 – Concrete wall 2 – Concrete Masonry wall 3 – One layer of 5/8-inch thick Type X gypsum wallboard installed on the interior side of minimum 3 5/8-inch deep, minimum 20-gauge steel studs spaced at a maximum of 24-inch OC with lateral bracing every 4 ft. vertically. Minimum 4 lb/ft^3 mineral wool insulation (e.g. Thermafiber) friction fit in each stud cavity and at each floorline.
Cavity Insulation – Use either 1 or 2	1 - None 2 – noncombustible insulation (fiberglass or mineral wool) faced or unfaced
Exterior sheathing – Use either 1 or 2	1 – 1/2-inch thick, exterior type gypsum sheathing 2 – 5/8-inch thick, exterior type gypsum sheathing
Water resistive barrier applied to exterior sheathing – Use either 1, 2, 3, 4, or 5	1 – DELTA®-VENT SA 2 – DELTA®-VENT S/PLUS 3 – DELTA®-FASSADE S 4 – DELTA®-FOXX/PLUS 5 – DELTA®-MAXX/PLUS
Exterior Insulation – Use either 1 or 2	1 – Maximum 3-inch thick DOW THERMAX™ foil-faced polyisocyanurate insulation. All exterior insulation board joints taped with CW VentureTape foil tape or equivalent. 2 – Any noncombustible insulation material (e.g. mineral wool insulation). If batts, can be either faced or unfaced.
Exterior Wall Covering – Use either 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10	1 – Brick – Standard type brick veneer anchors, installed maximum 24 inches on center, vertically on each stud. Maximum 2-inch air gap between exterior insulation and brick. Standard nominal 4-inch thick, clay brick, running bond pattern, Type S mortar 2 – Stucco – Minimum ¾-inch thick, exterior cement plaster and lath. A secondary water-resistive barrier can be installed between the exterior insulation and the lath. The secondary water-resistive barrier shall not be full-coverage asphalt or butyl-based self-adhered membranes. 3 – Minimum 2-inch thick natural stone (granite, limestone, marble, sandstone) or minimum 1-½ inch thick cast artificial stone veneer. Any standard installation technique can be used. 4 – Minimum 1-½ inch thick artificial cast stone. Any standard installation technique can be used. 5 – Minimum 1-¼ inch thick Terra Cotta non-open jointed. Any standard installation technique can be used. 6 – Minimum 1-½ inch thick concrete or precast concrete panels with a maximum 2-inch air gap between the exterior insulation and the concrete panel. Any standard installation technique can be used. 7 – Metal composite material (MCM) system that has successfully been tested by the panel manufacturer in accordance with NFPA 285 using any attachment system with direct mechanical attachment to the support system. 8 – Metal exterior wall coverings such as steel, aluminum, copper, etc. using any standard direct mechanical attachment to the support system. 9 – Minimum 4-inch thick concrete masonry (CMU) with maximum 2-inch air gap between the exterior insulation and the CMU 10 – Fiber cement siding or fiber cement panels using any standard installation technique.